

Appl. No.: 10/037,987
Art Unit: 1712 Docket No.: B01-30
Reply to Final Office Action of November 8, 2004

LISTING OF CLAIMS

1. (Currently amended) A golf ball comprising a core, an intermediate layer, and a cover, wherein the core has an outer diameter of 1.550 inches to 1.620 inches and is formed of a composition comprising a base rubber and a ZnO nanoparticulate material having a particle size of less than about 1000 nm and at least one matrix material selected from the group consisting of thermoplastics, thermoplastic elastomers, ionomers, copolyether-esters, copolyester-esters, copolyether-amides, copolyester-amides, thermoplastic urethanes, thermoset ureas, epoxy urethanes, epoxy ureas, phenolics, polyisoprenes, and metallocene or single-site non-metallocene catalyzed polymers, and the intermediate layer has a thickness of 0.035 inches or less and comprises a material selected from the group consisting of thermoplastic elastomers, ionomers, ~~copolyether-esters, copolyester-esters~~, copolyether-amides, copolyester-amides, ~~thermoplastic urethanes, thermoset ureas, epoxy urethanes, epoxy ureas, phenolics, polyisoprenes, and metallocene or single-site non-metallocene catalyzed polymers~~, and the intermediate layer has a thickness of 0.035 inches or less and comprises a material selected from the group consisting of thermoplastic elastomers, ionomers, ~~copolyether-esters, copolyester-esters~~, copolyether-amides, copolyester-amides, ~~thermoplastic urethanes, thermoset ureas, epoxy urethanes, epoxy ureas, phenolics, polyisoprenes, and metallocene or single-site non-metallocene catalyzed polymers~~.
2. (Withdrawn) The golf ball of claim 1, wherein the nanoparticulate material comprises platelets having a diameter of about 0.9 nm to about 1000 nm and have an aspect ratio of about 100 to about 1000.
3. (Withdrawn) The golf ball of claim 1, wherein the composition further comprises a layered material comprising phyllosilicates, smectite clay minerals, montmorillonite, sodium montmorillonite; magnesium montmorillonite; calcium montmorillonite; nontronite; beidellite; volkonskoite; hectorite; saponite; saucomite; sobockite; stevensite; svinfordite; vermiculite; micaceous minerals; illite; mixed layered illite; smectite minerals; ledikite; admixtures of illites and mixtures thereof.
4. (Withdrawn) The golf ball of claim 3, wherein the layered material comprises montmorillonite, nontronite, beidellite, volkonskoite, hectorite, saponite, saucomite, sobockite, stevensite, svinfordite, and mixtures thereof.
5. (Withdrawn) The golf ball of claim 3, wherein the layered material is swellable.

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6. (Withdrawn) The golf ball of claim 1, wherein the composition comprises an inorganic material comprising chemically-modified montmorillonite clays; polymer grade montmorillonites; and mixtures thereof.
7. (Withdrawn) The golf ball of claim 1, wherein the composition comprises an organic material comprising polyhedral oligomeric silsequioxanes.
8. (Withdrawn) The golf ball of claim 1, wherein the composition further comprises a second nanomaterial.
9. (Withdrawn) The golf ball of claim 8, wherein the second nanomaterial comprises carbon nanotubes; Fullerenes; nanoscale titanium oxides; iron oxides; modified ceramics; and mixtures thereof.
10. (Cancelled)
11. (Original) The golf ball of claim 10, wherein the thermoset material comprises polyamides; polyesters; polyurethanes; polycarbonates; polyepoxides; and mixtures thereof.
12. (Cancelled)
13. (Previously presented) The golf ball of claim 1, wherein the ZnO is present in the core in an amount less than about 5 pph.
14. (Withdrawn) The golf ball of claim 1, wherein the nanoparticulate is metallic.
15. (Withdrawn) The golf ball of claim 14, wherein the metallic nanoparticulate comprises nano-tungsten, nano-zinc, nano-tin, or a mixture thereof.
16. (Original) The golf ball of claim 1, wherein the core comprises a solid, liquid, or gel-filled center.

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17. (Original) The golf ball of claim 1, wherein the core comprises an outer core layer.
18. (Original) The golf ball of claim 17, wherein the outer core layer is a solid layer or a layer of tensioned elastomeric material.
19. (Original) The golf ball of claim 1, wherein the cover comprises an inner cover layer and an outer cover layer.
20. (Original) The golf ball of claim 19, wherein at least one of the inner and outer cover layers comprises a thermoplastic or thermoset polyurethane or thermoset polyurea.
21. (Original) The golf ball of claim 19, wherein the outer cover layer comprises saturated polyurethane.
22. (Original) The golf ball of claim 19, wherein the inner cover has a hardness, as measured on the ball, of less than about 75 Shore D.
23. (Original) The golf ball of claim 22, wherein the inner cover hardness, as measured on the ball, is between about 30 and about 70 Shore D.
24. (Original) The golf ball of claim 22, wherein the inner cover hardness, as measured on the ball, is between about 65 and about 70 Shore D.
25. (Original) The golf ball of claim 19, wherein the inner cover layer has a thickness of no greater than about 0.060 inches.
26. (Original) The golf ball of claim 25, wherein the inner cover layer has a thickness of no greater than about 0.055 inches.
27. (Original) The golf ball of claim 26, wherein the inner cover layer has a thickness of no greater than about 0.035 inches.

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28. (Original) The golf ball of claim 1, wherein the golf ball has a compression of between about 70 and about 95.

29. (Original) The golf ball of claim 1, wherein the cover has a hardness, as measured on the ball, of less than about 70 Shore D.

30. (Original) The golf ball of claim 29, wherein the cover hardness, as measured on the ball, is no greater than about 61 Shore D.

31. (Original) The golf ball of claim 30, wherein the cover hardness, as measured on the ball, is no greater than about 55 Shore D.

32. (Original) The golf ball of claim 1, wherein the cover has a material hardness of less than about 70 Shore D.

33. (Original) The golf ball of claim 32, wherein the cover has a material hardness of no greater than about 58 Shore D.

34. (Original) The golf ball of claim 33, wherein the cover has a material hardness of no greater than about 48 Shore D.

35-38. (Cancelled)